**STUDENT LEARNING OUTCOMES**

1. Define MIS and describe the three resources within it—people, information, and information technology.
2. Describe how to use break-even analysis to assess the financial impact of IT.
3. Describe how to use Porter’s Five Forces Model to evaluate an industry.
4. Compare and contrast Porter’s three generic strategies and the RGT framework as approaches to the development of business strategy.
Cell Phones Doom Phone Revenues for Hotels

- The year 2000 – typical hotel could budget annual revenue of $1,274 per room for in-room phone charges
- The year 2009 – typical hotel could budget annual revenue of only $178 per room for in-room phone charges
- Cell phones and technologies of all kinds are transforming entire industries

Questions

1. When was the last time you used a pay phone? How often have you used a pay phone in the last year?
2. If you needed to use a pay phone, would you know immediately where one was located?
3. When was the last time you used your cell phone? How often have you used your cell phone in the last day?

INTRODUCTION

- You live in a digital age
- Average American relies on more than 250 computers per day
- According to Time magazine, 14% of cell phone users stopped having sex to take a phone call
- How much do you rely on technology in your daily life?
INTRODUCTION

- **Management information systems (MIS)** - planning for, development, management, and use of information technology to help people perform all tasks related to information processing and management.
  - Important field of study
  - Important business discipline

INTRODUCTION

- MIS deals with the coordination and use of 3 very important organizational resources
  1. People
  2. Information
  3. Technology

The Synergy among the Three Resources of MIS

THE SYNERGY: How people can use information-based technology to:
- Solve a problem
- Make decisions
- Make decisions better
- Monitor closer
- Make accurate near-precise
CHAPTER ORGANIZATION

1. MIS Resources: Information, People, and Information Technology
   - Learning Outcome #1
2. Financial Impact of IT
   - Learning Outcome #2
3. Industry Impact of IT
   - Learning Outcome #3
4. Strategy Impact of IT
   - Learning Outcome #4

MIS RESOURCE #1: INFORMATION

- Intellectual asset hierarchy - data, information, and business intelligence

- **Data** - raw facts that describe a particular phenomenon such as the current temperature, the price of movie rental, or your age

- **Information** - data that have a particular meaning within a specific context

Information Resource

Information is often aggregated data that has meaning such as average age, youngest and oldest customer, and a histogram of customer ages.
- **Business intelligence (BI)** - collective information about...
  - Customers
  - Competitors
  - Business partners
  - Competitive environment
- BI is information on steroids
- BI can help you make important, strategic decisions

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- **Information Resource**

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- **Information Resource - Quality Attributes**

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Information Resource – Organizational Perspective

- Upward – describes state of the organization based on transactions
- Downward – strategies, goals, and directives that originate at a higher level and are passed to lower levels
- Horizontal – between functional business units and work teams
- Outward/inward – from and to customers, suppliers, etc

Information Resource – Flows of Information

- **Internal information** – operational aspects of the organization
- **External information** – environment surrounding the organization
- **Objective information** – quantifiably describes something that is known
- **Subjective information** – describes something that is unknown

Information Resource – What It Describes
MIS RESOURCE #2: PEOPLE

- People are the most important resource in any organization, with a focus on
  - Technology literacy
  - Information literacy
  - Ethical responsibilities

People Resource

- **Technology-literate knowledge worker** - knows how and when to apply technology
- **Information-literate knowledge worker**
  - Can define information needs
  - Knows how and where to obtain information
  - Understands information
  - Acts appropriately based on information
- **Ethics** - principles and standards that guide our behavior toward other people

People Resource - Ethics

- You always want your actions to fall in Quadrant I – both ethical and legal.
**MIS RESOURCE #3: INFORMATION TECHNOLOGY**

- **Information technology (IT)** - computer-based tools that people use to work with information
- **Hardware** - physical devices that make up a computer
- **Software** - set of instructions that your hardware executes to carry out a specific task for you

**Information Technology - Hardware**

1. **Input device** - tool for entering information and commands
2. **Output device** - tool for see or hearing results
3. **Storage device** - tool for storing information
Information Technology – Hardware

4. **CPU** – hardware that interprets and executes instructions (*RAM* temporarily stores information and software for the CPU)
5. **Telecommunications device** – for sending info
6. Connecting devices – like cables, ports, etc.

Information Technology – Software

- Two types of software
  - **Application software** – enables you to solve specific problems and perform specific tasks (Word, payroll, inventory management, etc)
  - **System software** – handles tasks specific to technology management (operating system, anti-virus, etc)

See Extended Learning Module A for a review of IT hardware and software

**FINANCIAL IMPACT OF INFORMATION TECHNOLOGY**

- Regardless of the resource, you must always assess its financial impact
- Many times, you will do so using break-even analysis
- IT can definitely impact break-even analysis
Break-Even Analysis

- Consider and chart the following financial information
  - Fixed costs – costs you incur even if you don’t sell anything
  - Variable costs – costs you incur when you sell something (COGS)
  - Revenue – how much you sell one unit for

Break-Even Analysis Example

- Assume online movie poster business
- $1,500 – online store, domain name registration, search engine placement, etc (fixed costs)
- $6 - $4 to buy poster from supplier and $2 to ship to customer (var costs)
- $9 – price at which you sell a move poster
Reducing Fixed Costs with IT

- Digital storefronts – no physical retail space
- Telecommuting – fewer expenses related to office space
- VoIP – using the Internet for phone calls

Reducing Variable Costs with IT

- Virtual goods – because they are digital, there is no cost to duplicate and sell again and again
- Crowdsourcing – use non-paid non-employees to create value
Reducing Variable Costs with IT

As you reduce variable costs, your break-even point occurs sooner, which means you stay in this case.

Increasing Revenue with IT

- Recommendation engines – to drive complementary sales
- Long-tail economics – to sell products/services that are too expensive for physical stores to carry
  - Physical stores only carry what they can sell large amounts of
  - Because of fixed costs

INDUSTRY IMPACT OF INFORMATION TECHNOLOGY

- Porter’s Five Forces Model helps business people understand the relative attractiveness of an industry and the industry’s competitive pressures in terms of
  1. Buyer power
  2. Supplier power
  3. Threat of substitute products or services
  4. Threat of new entrants
  5. Rivalry among existing competitors
PORTER'S FIVE FORCES MODEL

- Threat of New Entrants
- Rivalry among Existing Competitors
- Bargaining Power of Suppliers
- Bargaining Power of Buyers
- Threat of Substitute Products or Services

Buyer Power

- **Buyer power** - high when buyers have many choices and low when their choices are few
- Competitive advantages are created to get buyers to stay with a given company
  - NetFlix - set up and maintain your movie list
  - United Airlines - frequent flyer program
  - Apple iTunes - buy/manage your music

Buyer Power

- **Competitive advantage** - providing a product or service in a way that customers value more than what the competition is able to do
- **First-mover advantage** - significant impact on gaining market share by being the first to market with a competitive advantage
- All competitive advantages are fleeting
Supplier Power

- **Supplier power** - high when buyers have few choices and low when choices are many
- The opposite of buyer power

Threat of Substitute Products and Services

- **Threat of substitute products and services** - high when there are many alternatives for buyers and low when there are few alternatives
- Switching costs can reduce this threat
- **Switching cost** - a cost that makes buyers reluctant to switch to another product/service

Threat of New Entrants

- **Threat of new entrants** - high when it is easy for competitors to enter the market and low when entry barriers are significant
- **Entry barrier** - product or service feature that customers have come to expect and that must be offered by an entering organization
- Banking - ATMs, online bill pay, etc
Rivalry Among Existing Competitors

- **Rivalry among existing competitors** - high when competition is fierce and low when competition is more complacent
- General trend is toward more competition in almost all industries
- IT has certainly intensified competition in all sectors of business

Strategy Impact of Information Technology

- Porter identified 3 generic business strategies for beating the competition:
  1. Overall cost leadership
  2. Differentiation
  3. Focus

Overall Cost Leadership

- **Overall cost leadership** - offering the same or better quality product or service at a price that is less than what any of the competition is able to do
  - Walmart (Always Low Prices, Every Day Low Prices)
  - Dell – a computer the way you want it at an affordable price
  - Hyundai and Kia – reliable low-cost cars
  - Grocery stores – high-volume, low-margin
Differentiation

- **Differentiation** - offering a product or service that is perceived as being “unique” in the marketplace
  - Hummer - Like Nothing Else
  - Audi and Michelin - safety
  - Lund's & Byerly's - high-end grocery store
  - Apple

Focus

- **Focus** - focusing on offering products or services
  - To a particular segment or buyer group
  - Within a segment of a product line
  - To a specific geographic market
- Examples
  - Restaurants
  - Physician offices
  - Legal offices

Run-Grow-Transform (RGT) Framework

- **Run-grow-transform (RGT) framework** - the allocation in terms of percentages of IT dollars on various types of business strategies
RGT Framework

- How will you allocate IT dollars to
  - Run - optimizing execution of existing processes
  - Grow - increasing market share, products, and service offerings
  - Transform - innovating business processes, products, and/or services

Porter and RGT

- Run = overall cost leadership
- Grow = focus and differentiation
- Transform = (new) differentiation